

Chapter 12: Plan Implementation, Impacts & Benefits, and Performance Monitoring



Introduction

Creating and implementing an effective IRWM Plan requires an understanding of the regional geography, water resources, demographics, economy, communities, stakeholders, and current issues regarding water use and management. The planning process also must consider concurrent planning efforts, data, and planning gaps, and must combine all the information into a coherent and comprehensive planning tool. With such an understanding, an effective IRWM Plan then develops objectives and strategies for management of and planning for water resources (as described in Chapter 7). These strategies, in turn, lead to the selection (Chapter 13) of an array of projects (Chapter 14) that contribute toward meeting the Plan's objectives. Equally important, to effectively implement an IRWM Plan, each region must create a willingness and desire on the part of community stakeholders and regional decision-makers to work together in a collaborative manner (Chapter 8).

Fundamental to successfully implementing the Inyo-Mono IRWM Plan is the means to monitor and evaluate progress at both the project and program levels. Doing so allows the Inyo-Mono RWMG an opportunity to determine whether the short and long-term objectives of the Plan are being achieved. Additionally, the needs within the Inyo-Mono region are expected to change as implemented projects begin addressing needs and as new and possibly unexpected situations arise. The implementation approach therefore needs to be flexible and iterative and provide for the opportunity to introduce changes as needed to accomplish the various resource management strategies identified for each planning objective. Thus, developing and implementing a

monitoring and evaluation protocol system is critical in order to provide an opportunity to modify elements of the Plan based on an adaptive management approach. This chapter addresses the Plan Performance & Monitoring and Impacts & Benefits Plan Standards.

Actions and Projects to Implement the Plan

The initial (or Phase I) version of the Inyo-Mono IRWM Plan was created during the summer and autumn of 2010. It was formally adopted by the Inyo-Mono RWMG on December 15, 2010. Since that time, virtually all activities of the Inyo-Mono RWMG have been contributing towards

implementation and/or updates of the Plan. The routine meetings of the RWMG, advanced outreach and needs assessment meetings (Chapter 6 and 10), the Round 1 Implementation and Round 2 Planning projects (see below), the focus on disadvantaged communities (Chapter 1), capacity-building activities (Chapter 10), the continued consideration of alternative governance structures (Chapter 5), collaboration with Inyo and Mono Counties on overlapping planning efforts (Chapter 8), and Plan updates and revisions all work together to implement the Plan.

Round 1 Implementation Projects

In August, 2011, Central Sierra Resource Conservation and Development, acting on behalf of the Inyo-Mono RWMG, was awarded \$1,075,000 through the first round of Prop. 84 Implementation funding. Although the initial proposal to DWR contained 15 projects and requested just over \$4 million, the final award funded seven of the initial 15 projects (those projects ranked 1 through 7 by the RWMG). As a whole, these projects help to implement key features of the Inyo-Mono IRWM Plan, especially the Inyo-Mono objectives relating to water supply, water quality, water infrastructure, and involvement of disadvantaged communities (Table 12-1). Objectives 7 and 8 had not yet been developed when the Round 1 Implementation projects were awarded. These seven projects are a direct result of the extensive outreach done throughout the region and the effective governance and decision-making structure employed by the RWMG. A brief synopsis of each project is provided below. Figure 12-1 shows the location of each of the seven projects. The Inyo-Mono website has a page devoted to the description and current status of the seven projects, as well as an interactive map where project progress is tracked: <http://inyo-monowater.org/inyo-mono-irwm-plan-2/implementation/>.

Project Number <i>(Implementation projects are numbered, Planning Studies in italics)</i>	Objective 1: <i>Protect, conserve, optimize, and augment water supply while maintaining ecosystem health</i>	Objective 2: <i>Protect, restore and enhance water quality</i>	Objective 3: <i>Provide stewardship of water-dependent natural resources</i>	Objective 4: <i>Maintain and enhance water, wastewater, emergency response, and power generation infrastructure efficiency and reliability</i>	Objective 5: <i>Address climate variability and reduce greenhouse gas emissions</i>	Objective 6: <i>Encourage participation of small and disadvantaged communities, including tribes, in IRWM process to identify and work towards meeting their needs</i>	Objective 7: <i>Promote sustainable stormwater and floodplain management that enhances flood protection</i>	Objective 8: <i>Promote groundwater monitoring, management, and mitigation in cooperation with all affected parties</i>
1 (Tecopa)	X	X		X		X		
2 (Coleville)	X	X		X		X		
3 (Round Valley)	X			X				
4 (Hilltop)	X			X				
5 (MCWD)	X	X		X				
6 (SCADA)	X		X	X	X	X		
7 (CSA)		X	X	X				

Project #1: Safe Drinking Water and Fire Water Supply Feasibility Study for Tecopa

This project conducted a feasibility study to determine whether safe drinking water and fire flow storage facilities can be provided in the two areas that make up Tecopa (Tecopa Heights and Tecopa Hot Springs). Instead of focusing on the delivery of potable water to every household, the study analyzed the feasibility of constructing a public drinking water station and developed two alternatives for siting such a station in each area of Tecopa. The analysis of each site took into account recent water quality tests and developed appropriate treatment suggestions. The water station would provide treated, potable water where residents could fill drinking water containers. The study also identified locations in each part of town where an above-ground water storage tank for fire flow could be located and identified the type of storage tank that could be used. Although the feasibility study is complete, it is now the responsibility of the community members, Inyo County, and the RWMG to secure funding for the construction of the water-filling station and fire water storage tanks. The final feasibility study can be found on the Inyo-Mono website: http://inyo-monowater.org/wp-content/uploads/2013/12/Tecopa-Feasibility-Study-Report_pgs1-44.pdf.

Phase I Plan Objectives addressed: 1) Protect, conserve, optimize and/or augment water supply; 2) Protect, restore and/or enhance water quality; 4) Maintain and enhance water, wastewater, and/or power generation infrastructure efficiency and reliability; 6) Increase participation of small and disadvantaged communities in IRWM process

Project #2: Coleville High School Water Project

The purpose of this proposal was to eliminate the public health hazard at the Coleville School campus resulting from high levels of uranium found in the groundwater used for the school's water supply. The natural levels of uranium exceeded the California maximum contaminant level of 20pCi/L. In order to meet this standard, the Eastern Sierra Unified School District employed an ion exchange treatment system. The project also provided for storage tanks to store both potable water and fire-fighting water. This new treatment and storage system benefits both the students, staff, and faculty at the school as well as other community users plumbed into the school's water system. The system came online in spring of 2013, and community members now have access to potable water.

Phase I Plan Objectives addressed: 1) Protect, conserve, optimize and/or augment water supply; 2) Protect, restore and/or enhance water quality; 4) Maintain and enhance water, wastewater, and/or power generation infrastructure efficiency and reliability; 6) Increase participation of small and disadvantaged communities in



IRWM process

Project #3: Round Valley Joint Elementary School District Water Project

Round Valley Elementary School was served by one shallow well with deteriorating steel casing. Over the last few years, the water system had failed three times, forcing the school to



bring in portable bathrooms and bottled water, and to consider potentially closing the school. Current state water standards require new systems have redundant sources. A new well was drilled, providing a second water source. In addition, the existing well was lined with a new casing, and a new automated control system was installed.

Phase I Plan Objectives addressed: 1) Protect, conserve, optimize and/or augment water supply; 4) Maintain and enhance water, wastewater, and/or power generation infrastructure efficiency and reliability

Project #4: New Hilltop Well

The project drilled a new well and installed a small pressure system to service the Hilltop subdivision of Swall Meadows. The new system augments and may eventually replace an aging artesian well source that is

located 2500 feet from the community, has become erratic in its reliability, and is prone to increasing supply line maintenance needs.

Phase I Plan Objectives addressed: 1) Protect, conserve, optimize and/or augment water supply; 4) Maintain and enhance water, wastewater, and/or power generation infrastructure efficiency and reliability

Project #5: Well Rehabilitation – Phase I

The Mammoth Community Water District (MCWD) operates two wells that have been shown to have issues with contaminants. This project provides profiling studies of both wells. By profiling the wells, MCWD will be able to determine if water quality can be improved by sealing off sections that contribute the highest contaminant loading. The testing will also verify the most efficient pumping rates while minimizing contaminant loading and maximizing yield.

Phase I Plan Objectives addressed: 1) Protect, conserve, optimize and/or augment water supply; 2) Protect, restore and/or enhance water quality; 4) Maintain and enhance water, wastewater, and/or power generation infrastructure efficiency and reliability

Project #6: Pump Operation Redundancy and SCADA Improvements

Inyo County owns and operates three community water systems serving the unincorporated towns of Laws, Independence and Lone Pine. The combined population served by the water

systems is approximately 2,000. The Lone Pine and Independence water systems are supplied by water from a well and gravity head storage tanks. A well and hydro pneumatic storage tank supplies the Laws community water system. Transducers located at the tanks send high/low signals to the Supervisory Control and Data Acquisition System (SCADA) system to operate the pumps. Currently, there is no redundancy to activate the pumps should the transducers or SCADA system fail. The goals of this project are to increase the overall reliability of the water systems' ability to start the pumps when necessary, provide redundancy to operator notification in the event of an emergency, increase the variables monitored by the SCADA system, install a communications line to increase the variables monitored, and achieve a degree of energy savings and efficiency by shifting the pump-on times to the low peak or base peak periods from the high peak period. This project will install secondary pressure sensor switches on each water system as a backup to energize and operate the well pumps and maintain system pressure in case of transducer or SCADA system failures. The project also will upgrade the SCADA systems to include capability to program off-peak pumping capability to save energy.

Phase I Plan Objectives addressed: 1) Protect, conserve, optimize and/or augment water supply; 4) Maintain and enhance water, wastewater, and/or power generation infrastructure efficiency and reliability; 5) Address climate variability and/or reduce greenhouse gas emissions; 6) Increase participation of small and disadvantaged communities in IRWM process

Project #7: CSA-2 Sewer Improvements Project

The sewer system in Aspendell, a small community to the west of Bishop, was installed in the late 1960s and consisted of a gravity sewer collector that discharged to a communal septic tank, force main, and leach field. By the early 1970s, the system began to exhibit various problems. In the mid-1970s an engineering study found that the leach field was poorly designed and the collector system had problems related to poor construction, hydraulics, and inflow and infiltration (I&I). By replacing approximately 3000 feet of main, Inyo County will eliminate the source of blockages and I&I that has resulted in overflow and spillage.

Phase I Plan Objectives addressed: 2) Protect, restore and/or enhance water quality; 3) Provide stewardship of our natural resources; 4) Maintain and enhance water, wastewater, and/or power generation infrastructure efficiency and reliability

In November 2012, California Trout, on behalf of the Inyo-Mono RWMG, was awarded a Round 2 Planning Grant. The work of this grant includes three planning studies that will (1) provide relevant data to the IRWM Program, (2) add information to the Plan about project needs, and (3) address planning gaps in the region. All three planning studies (Oak Creek Stream Stabilization Technical Study; West Walker River Restoration Planning Study; Town of Mammoth Lakes Stormwater Management Plan) start to address the Phase II Plan objective concerning stormwater and flood management (Objective 7). The locations of these planning studies are shown in Figure 12-1.

Round 2 Planning Studies

In addition to ongoing Inyo-Mono IRWM programmatic work funded by the Round 2 Planning

Grant, the grant is funding three planning studies focusing on important issues for the region. The first project will develop a restoration plan for the West Walker River. Flooding from large snowmelt or rain-on-snow events impacts adjacent agricultural land and restricts access along a major highway in the Eastern Sierra. Having a restoration plan in place will help to protect the natural flow of the river as well as the economic activity of the region. The second project is a technical feasibility study for the Oak Creek watershed, which experienced severe fire and flood events in the last decade. This project will lead to the restoration of parts of the stream channel and surrounding watershed as well as the protection of the downstream Fort Independence Indian Reservation. Finally, the Town of Mammoth Lakes will be developing a much-needed stormwater management master plan. A poor understanding of stormwater flow and drainage in the town has led to flooding of certain neighborhoods. This plan will lead the way towards improved stormwater management and will provide a template for other water managers in the Inyo-Mono region to use.

Timelines for Active and Planned Projects

The Inyo-Mono RWMG was awarded a Round 1 Prop. 84 Implementation Grant in August 2011. The \$1,075,000 awarded funded seven implementation projects throughout the Inyo-Mono region. All Round 1 Implementation project work will be completed by the end of 2014.

The Inyo-Mono IRWM Program was also awarded a Round 2 Planning Grant, through which it is implementing three planning studies. These planning studies will be complete by summer 2015.

It is likely that a subset of the current Phase II Plan projects (Chapter 14) will be submitted for Round 3 Implementation funding. Recognizing that Prop. 84 funding is finite, the Inyo-Mono RWMG is committed to helping to secure financial and technical resources to continue implementing high priority regional projects well beyond the tenure of Prop. 84.

Benefits and Impacts of Plan Implementation

The Inyo-Mono RWMG is committed to ensuring that the IRWM Plan is consistent and compatible with existing planning documents, and in particular, established agreements and legal obligations. Rather than confounding the present legal and regulatory environment, the IRWM Plan is intended to streamline and improve stakeholders' ability to operate and succeed within the current (and possible future) regulatory environment. Moreover, participants in the Inyo-Mono RWMG recognize the value of the Inyo-Mono IRWM planning effort in that it affords an opportunity for regional coordination and collaboration throughout the planning region itself. Indeed, the wide array of RWMG Members (Chapter 5) has committed to participating in the Inyo-Mono IRWM process as a means to leverage collaborative opportunities and realize multi-agency efficiencies and topical benefits. Table 12-2 provides a summary of the expected impacts and benefits derived from the development and implementation of the Inyo-Mono IRWM Plan.

Benefits of Plan Implementation

Activating a water management plan for the entire Inyo-Mono region has many advantages compared to local efforts done in isolation. Regional planning allows consideration of the broad

range of interactions among various activities regarding water resources and their use. Regional planning has the potential to provide a better balance between conservation of natural resources and economic development. Given the small size of communities throughout this portion of eastern California, implementation of a regional approach permits some economies of scale to be realized that cannot be achieved by an individual community. In particular, rural disadvantaged communities and Native American tribal communities have more opportunity to address and solve their water-related issues when they work together and with entities with more resources. A good example of collaboration leading to more efficient use of resources is in relation to the Oak Creek watershed near Independence. The Inyo National Forest and the Fort Independence Indian Reservation are working together, using IRWM planning grant funds, to determine the best way to restore the watershed after recent fire and flood events.

The regional planning process has also created the opportunity for people throughout this large but sparsely populated area to agree on principles for water resources management as well as have a greater voice on statewide water issues and policies. As a coalition of small water suppliers and local jurisdictions and agencies, the Inyo-Mono RWMG has greater political and funding stature than any of the members in isolation. The Inyo-Mono IRWM Program Office has acted as an advocate in Sacramento for the small and dispersed water-related entities, agencies, and disadvantaged communities of the region on matters of policy, regulation, and legislation.

Initial development and subsequent revision of the Inyo-Mono IRWM Plan has forged cooperation and collaboration among local water providers, local government, federal and state agencies, conservation groups, and interested citizens around the common goal of improved management of the region's water resources. Many people are now talking and helping each other in ways that did not exist prior to the formation of the Inyo-Mono RWMG, such as small water districts sharing information and resources to help solve water system management issues. Partnerships now exist among agencies at various levels of government and private water entities. Such collaboration promotes sharing of data, information, and expertise and reduces duplication of effort and services.

The regional perspective of the Inyo-Mono RWMG provides a comprehensive approach to solving issues related to water supply, water quality, stormwater control and flood management, aquatic and riparian habitat stewardship, and DAC- and tribe-specific water concerns. Creating a regional planning process based on watershed boundaries is much more appropriate for addressing such matters than only through small political jurisdictions or water districts. Furthermore, regional water planning has and will continue to encourage coordination and cooperation among communities and local entities that had little interaction in the past. Such collaboration improves the chances that impacts and benefits of projects are shared and equitably distributed rather than the historical situation of one area benefitting at the expense of another. Because of the egalitarian nature of the Inyo-Mono governance structure, DACs and tribes have an equal voice to all other stakeholders and can ensure their interests are not ignored. A watershed approach also helps ensure that projects primarily designed for a particular purpose, such as stormwater management, adequately consider other objectives and potential consequences, such as water quality or riparian habitat conservation. When projects

become truly integrated, then multiple benefits to a variety of beneficiaries can be achieved with minimal adverse impacts.

By combining water management strategies through a collaborative and integrated approach, there is potential for some synergistic benefits, where the combined benefits are greater than merely the sum of results from independent efforts. Such benefits are likely to be achieved at lower cost than through independent projects. In cases where agencies are able to cooperate and avoid "turf battles", a truly collaborative and integrated project, in theory, can be implemented more efficiently and more quickly than can be done by a single agency with a narrow focus.

Beneficiaries of Plan implementation include residents of the planning area; the hundreds of thousands of people who visit the eastern Sierra Nevada and northern Mojave Desert each year; water users throughout the region; local water providers; agencies of town, city, county, state, and federal governments; disadvantaged communities and Native American tribes; people within the service area of the Los Angeles Department of Water and Power who rely on the watersheds of the Mono Basin and Owens River for a substantial fraction of their water supply; irrigators in Nevada who rely on the watershed of the Walker River for their irrigation supply; residents in Nevada who depend on the Amargosa groundwater basin for domestic and irrigation water supply; and flora and fauna that depend on healthy ecosystems.

Adverse Impacts of Plan Implementation

Impacts of *not* implementing the plan are considered to be far greater than any adverse impacts that might occur as a result of plan implementation. To undo the progress from dozens of RWMG and outreach meetings and tens of thousands of hours of work would be to take a step backwards in water management for the region. All of the actions taken to implement the Plan have multiple benefits and provide advantages for one or more communities. Compared to some of the large water projects constructed elsewhere in California, the projects proposed within the Inyo-Mono planning region are quite small in scale and scope and are simply not of sufficient magnitude to cause significant adverse impacts to neighboring communities, whether classified as disadvantaged or not. None of the projects proposed to date could be considered as "zero-sum", where one community or water supplier benefits at the expense of another. Perhaps the primary impact of Plan implementation to tribes and DACs is the competitive nature of project funding where projects benefiting tribes and DACs are not adequately funded.

An economic impact of improved water management and infrastructure that needs to be mentioned is increased cost to most water users and to State taxpayers. Throughout the Inyo-Mono IRWM planning process, the RWMG has been learning that much of the water supply infrastructure in the region needs to be replaced or upgraded and that financial reserves are not adequate to cover the eventual costs. Water systems with aging infrastructure and low reserves will need to raise their rates to cover future maintenance and capital expenses and may need to impose large fees to pay for major repairs in the event of sudden failures. Furthermore, because these small systems cannot take advantage of economies of scale, such infrastructure upgrade or replacement projects may be more expensive per capita or per connection than urban water projects.

Beyond the potential impacts listed with respect to the Inyo-Mono plan objectives in Table 12-1, one may consider potential impacts associated with eventual project implementation. Adverse impacts can occur both during the construction period as well as over the long-term operation of a project. Some impacts are potentially cumulative, where two or more activities combine to produce adverse effects that exceed some threshold or level of significance. Specific impacts of individual projects (and their potential for cumulative effects) will be evaluated with respect to CEQA and/or NEPA prior to project implementation. Appropriate mitigation would be determined as part of the environmental review. Some possible impacts related to the usual CEQA categories are briefly described below:

Aesthetics. Any construction activities and resulting structures have the potential to affect aesthetics.

Air Quality. Construction activities may impact air quality, primarily by generating dust.

Biological Resources. Construction, particularly earth-moving activities, often impacts biological resources. Habitat fragmentation is often a risk associated with construction projects. Projects intended to control invasive species or improve habitat often have short-term impacts, although such projects have net benefits for biological resources over the long term.

Cultural Resources. Buried or otherwise unknown cultural resources could be damaged by construction.

Geology and Soils. Almost all construction will result in some soil disturbance.

Hydrology and Water Quality. Some minor amount of erosion and sediment delivery might be expected from projects involving construction. Otherwise, most projects that have been proposed are intended to produce benefits for water supply and water quality. Projects that develop new water supplies for human use are likely to decrease in-stream flow or stored groundwater.

Land Use and Planning. None of the projects proposed so far would be incompatible with current county general plans or USFS Forest Plans.

Noise. Some noise is commonly generated during construction projects.

Population and Housing. None of the projects proposed so far would impact population or housing, and none could be regarded as encouraging growth.

Public Services and Utilities. The projects proposed so far are intended to improve public services such as water supply, drinking water quality, storm water management, and flood control.

Recreation. Some construction activities could adversely affect recreation in the short term.

Transportation and Circulation. Construction activities can have minor short-term impacts on traffic flow and routing.

Table 12-1. Impacts and Benefits of Plan Implementation

Inyo-Mono IRWM Plan Objectives	Inyo-Mono Region	
	Potential Impacts	Potential Benefits
1. Protect, conserve, optimize, and/or augment water supply	<ul style="list-style-type: none"> • Habitat degradation • Construction related delays or impacts to water supply or quality • Financial liability for long-term project management 	<ul style="list-style-type: none"> • New water supply systems • Increased reliability of water supply systems • Additional water supply via water conservation measures
2. Protect, restore, and/or enhance water quality	<ul style="list-style-type: none"> • Habitat degradation • Construction related delays or impacts to water supply or quality • Financial liability for long-term project management 	<ul style="list-style-type: none"> • Improved water quality • Improved aquatic and wetland habitats • Improved recreational opportunities • Improved human health within region • Improved health of regional flora and fauna
3. Provide stewardship of our natural resources	<ul style="list-style-type: none"> • Human and financial resource burden(s) • Limits on water diversions and groundwater pumping 	<ul style="list-style-type: none"> • Restoration of ecosystem processes • Increased ecological resilience • Improved long-term services provided by regional resources • Improved health and viability of regional habitats • Improved health of regional flora and fauna • Improved recreational opportunities • Improved regional socio-economic conditions
4. Maintain and/or enhance water, wastewater, and power generation infrastructure efficiency and reliability	<ul style="list-style-type: none"> • Financial liability for long-term project management • Environmental impacts of infrastructure projects 	<ul style="list-style-type: none"> • Increased reliability of water supply systems • Improved energy efficiency • Reduced potential for wastewater contamination • Reduced operational costs

Inyo-Mono IRWM Plan Objectives	Inyo-Mono Region	
	Potential Impacts	Potential Benefits
5. Address climate variability and/or reduce greenhouse gas emissions	<ul style="list-style-type: none"> Financial liability for long-term project management Construction related delays or impacts to regional resources due to new, more efficient infrastructure and energy sources Increased demand for water to support “green” technology/renewable energy sources 	<ul style="list-style-type: none"> Improved climate change adaptability Reduction of greenhouse gas emissions
6. Increase participation of small and disadvantaged communities in IRWM process	<ul style="list-style-type: none"> Time burden 	<ul style="list-style-type: none"> More comprehensive understanding of the needs of DAC and tribal entities Improved ability to address water needs of DACs and tribal entities Improved human and resource capacity
7. Promote sustainable stormwater and floodplain management that enhances flood protection	<ul style="list-style-type: none"> Environmental impacts of stormwater and flood management infrastructure Effects to surface water diversions Unforeseen impacts as flood regimes revert to natural flood patterns 	<ul style="list-style-type: none"> Reduced adverse impacts of flooding in communities Reduced erosion Improved water quality Improved habitat quality
8. Promote sound groundwater monitoring, management, and mitigation in cooperation with all affected parties	<ul style="list-style-type: none"> Difficulty of obtaining information due to unwillingness to share data or infrastructure Increased conflict among agencies/organizations 	<ul style="list-style-type: none"> Responding to and complying with mandates to monitor groundwater Improved understanding of groundwater trends, quality, and quantity Increased cooperation among entities Improved water availability to parties using or desiring to use groundwater

The impacts and benefits will be reviewed throughout the Plan’s duration. Based the progress of

the implementation of the Inyo-Mono IRWM Plan, the impacts and benefits may be revised to reflect lessons learned, achieved milestones, and to document any unforeseen impacts or benefits to date.

Inter-regional Benefits and Impacts

Most of our neighboring IRWM regions are on the west side of the main watershed divide in California, the Sierra Nevada that separates the Pacific Slope river basins from the Great Basin. Therefore, our region has no hydrologic or even hydraulic-engineering connections to the IWRM regions of the west side of the Sierra Nevada. Similarly, the boundary between our region and the Tahoe-Sierra region to our north is the watershed divide between the Walker River and Carson River basins, where there are no inter-basin water transfers. In the Northern Mojave Desert portion of our region, our southern boundary attempts to follow the approximate divides between groundwater basins. However, our region and the Mojave planning region share a portion of the Indian Wells - Searles groundwater basin within northern San Bernardino County. Otherwise, there are no significant hydrologic connections with our immediate neighbors to the south. Because of the Inyo-Mono region's location in the Great Basin, there are simply no regions downstream within California.

The principal connection that the Inyo-Mono region has with other regions is to the Greater Los Angeles and Gateway planning regions via the Los Angeles aqueduct and delivery of water from the Mono Basin and Owens River Basin to the Los Angeles Department of Water and Power service area. Any projects that improve watershed conditions potentially improve the quality of that exported water. None of the currently proposed projects would have any detrimental effect on the water quantity or quality exported from the Inyo-Mono Region.

As the Inyo-Mono IRWM plan evolves in the future, the impacts and benefits of implementation will be revisited and evaluated to reflect new conditions and additional project proposals.

Plan Performance & Monitoring

The Inyo-Mono IRWM Plan implementation will be evaluated based on the use of performance measures, quality assurance procedures, and periodic assessments. Performance monitoring will be employed with the intent of monitoring progress of project implementation as well as overall programmatic implementation. In particular, performance measures have been established to enable an objective evaluation of the Inyo-Mono IRWM Plan implementation relative to the objectives and resource



management strategies agreed upon by Members of the RWMG. While specific projects are being implemented, evaluation will happen on an ongoing basis. Otherwise, general Plan implementation will be evaluated annually.

Development of Plan Performance Measures

In the initial process of implementing the Inyo-Mono IRWM Phase II Plan, performance indicators and measures were created to track the progress of the seven Round 1 Implementation projects. These indicators were based on project-specific expected outcomes and outputs as well as on how each project addressed the Plan's objectives and resource management strategies. Additionally, indicators will be developed to ensure that deliverables associated with Round 2 Planning Grant funds are being met, which in turn will help to ensure that the Inyo-Mono IRWM Program as a whole is achieving its intended goals. Performance indicators, at a minimum, include three types: 1) administrative; 2) output; and 3) outcome. A description of the three types of performance indicators is provided below.

- 1) Administrative indicators are used to evaluate progress being made by the Inyo- Mono IRWM Program Office, grantees, project proponents, and others that may be responsible for supporting the implementation of the Phase II Plan. Indicators may include, but will not be limited to, such metrics as the number of RWMG and Administrative Committee meetings convened, the number of targeted outreach meetings convened, and timeliness and adequate completion of project reporting and other administrative obligations.
- 2) Output indicators are used to measure the overall progress associated with implementing the Phase II Inyo-Mono IRWM Plan. Output indicators will closely correspond to how projects are achieving their intended goals. Specific indicators may include the number of replaced wells, the number of infrastructure improvements targeted to improving water quality, the number of water conservation initiatives implemented, the number of acres reclaimed from invasive species, and the progress of projects in relation to their schedules.
- 3) Outcome indicators include indicators that evaluate either in a quantitative or qualitative manner the effects of projects that implement the Phase II Inyo-Mono IRWM Plan. For example, outcome indicators may include such metrics as the quantity of reclaimed water, the volume of water conserved via a water conservation initiative, the degree to which water quality was improved, and the area of native vegetation restored.

Each of the proposed performance indicators will be used to more broadly evaluate progress being made by the Inyo-Mono IRWM Program, provide information necessary to facilitate an adaptive management strategy, and provide relevant information to keep the general public and policy makers informed as to the success, challenges, and shortfalls of the Inyo-Mono IRWM Program.

Development of Project-Specific Monitoring Plans

Project proponents are required to provide information in their project proposals specific to monitoring, assessment, and indicators enabling evaluations of projects to be conducted. These project-specific monitoring plans may be modified based on input from granting agencies and

other interested parties. Working with the grant-specific grantee and members of the RWMG, project proponents will finalize monitoring plans prior to any on-the-ground project work commencing. Once approved, project proponents will be responsible for monitoring their own projects and reporting results to the grantee.

Monitoring Plan Performance through IRWM Projects

To meet the requirements of DWR's Proposition 84 Round 1 Implementation Proposal Solicitation Package (PSP), each project proponent must include in its proposal submission information specific to monitoring, assessment, and measuring performance. For each of the projects that is awarded funding, the monitoring, assessment, and performance indicators provide the basis for a monitoring plan necessary to evaluate progress being made towards the Plan's implementation and towards successful completion of the project. Using the project-specific monitoring, assessment, and performance measures from the Round 1 Implementation grant proposal (Attachment 6 of the application) for each of the seven projects, along with the Round 1 Implementation grant agreement, the Prop. 84 IRWM Guidelines, and the IRWM Plan's regional objectives and RMS, the Program Office developed a customized monitoring checklist for each Implementation project (Figure 12-2). At the completion of the project, each project proponent is asked to complete this checklist and provide an optional narrative explaining their responses. The three Round 2 Planning Grant planning studies will be monitored in a similar way.

Figure 12-2. An excerpt of the Project Performance & Monitoring checklist. Only Inyo-Mono Objectives 1 and 2 are visible; however, project leaders are asked to respond to all eight regional objectives as well as indicate if they achieved project-specific output and outcome indicators.

Project Performance & Monitoring			
Project #: 2 Coleville High School Water Project			
Project Proponent: Eastern Sierra Unified School District			
Project Specific Output Indicators			
	Yes	No	Comments
Has radioactive analysis been performed on the new treated water source?	<input type="checkbox"/>	<input type="checkbox"/>	
Was the target of 0pCi/L of Uranium achieved in the first water quality test?	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
Project Specific Outcome Indicators			
	Yes	No	Comments
Has an annual laboratory analysis for water quality been set up for the project?	<input type="checkbox"/>	<input type="checkbox"/>	
Have new water quality parameters been compared with original water quality tests from the technical report.	<input type="checkbox"/>	<input type="checkbox"/>	
Is the new uranium level below target MCL?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the target of 0pCi/L of Uranium still achievable through periodic replacements of the ion exchange resin?	<input type="checkbox"/>	<input type="checkbox"/>	
Did you meet the goal or your project? If yes, please provide a brief description stating how you achieved this goal. If no, please comment as to why the goal was not achieved.	<input type="checkbox"/>	<input type="checkbox"/>	
Other Standard Reporting Requirements: Please indicate here other monitoring/reporting requirements you may already be required to do independent from DWR contractual obligations. For example: CDPH Title 22 Ch. 16 Domestic Water Quality AND Monitoring Regulations; GAMA, CASGEM, or other internal reporting requirements that may yield valuable data.			
	Yes	No	Comments
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	

What Resource Management Strategies did you address to meet Inyo-Mono IRWM Objectives?			
Objective 1: Protect, Conserve, Optimize, and Augment Water Supply While Maintaining Ecosystem Health			
Resource Management Strategies	Yes	No	Comments
Improve water supply reliability	<input type="checkbox"/>	<input type="checkbox"/>	
Improve system flexibility and efficiency	<input type="checkbox"/>	<input type="checkbox"/>	
Support compliance with current and future state and federal water supply standards	<input type="checkbox"/>	<input type="checkbox"/>	
Address local water supply issues through various techniques, including, but not limited to: groundwater recharge projects, conjunctive use of water supplies, water recycling, water conservation, water transfers, and precipitation enhancement	<input type="checkbox"/>	<input type="checkbox"/>	
Optimize existing storage capacity	<input type="checkbox"/>	<input type="checkbox"/>	
Conserve and adapt water uses to future conditions	<input type="checkbox"/>	<input type="checkbox"/>	
Capture and manage runoff where feasible	<input type="checkbox"/>	<input type="checkbox"/>	
Incorporate and implement low-impact development design features, techniques, and practices	<input type="checkbox"/>	<input type="checkbox"/>	
Promote public education about water supply issues and needs	<input type="checkbox"/>	<input type="checkbox"/>	
Promote planning efforts to provide emergency drinking water to communities in the region in the event of a disaster	<input type="checkbox"/>	<input type="checkbox"/>	
Promote water efficiency in fish hatcheries	<input type="checkbox"/>	<input type="checkbox"/>	
Protect water supplies that support public recreational opportunities	<input type="checkbox"/>	<input type="checkbox"/>	
Objective #2) Protect, restore, and enhance water			
Resource Management Strategies	Yes	No	Comments

Entities Responsible for Evaluating Plan Implementation

Four entities are responsible for developing specific indicators for Plan implementation as well as evaluating the overall effectiveness of the Phase II Inyo-Mono IRWM Plan:

- 1) The Inyo-Mono Program Office is responsible for developing administrative indicators for the overall Program and will support the development of output and outcome indicators for Planning and Implementation Grants. Program Office staff will also be directly involved in performance evaluations.
- 2) Individual grantees (or fiscal sponsors) for each Prop. 84 IRWM grant are responsible for developing appropriate administrative indicators for Planning and Implementation grants. Additionally, each grantee shall contribute to the evaluation of appropriate project performance indicators throughout the duration of the respective grant.
- 3) Planning and Implementation grant project proponents, in accordance with Prop. 84 grant requirements, propose elements for monitoring the progress of their projects in the grant application. Project proponents, through agreements with the grantee and Program Office, are responsible for developing administrative, output, and outcome indicators for their respective projects, as well as a schedule to monitor progress, and for reporting progress to the grantee and Program Office.
- 4) Administrative Committee members have oversight of financial aspects related to the Inyo-Mono Program. Members of the Administrative Committee contribute to finalizing performance indicators and evaluating overall performance of both the Program and project implementation.

Together, the four entities described above serve as an informal Plan Evaluation Working Committee to ensure that the IRWM Plan is being implemented appropriately and successfully.

Data Management System for Tracking Plan Implementation & Performance

Based on the various performance indicators agreed upon by the RWMG, grantees, and/or project proponents in approved monitoring plans, a database will be created to house all Plan and project implementation monitoring and evaluation information. This database will allow for tracking Plan implementation performance against regional objectives and resource management strategies to effectively gauge success or deficiencies. Evaluation of effective Plan implementation will be reevaluated after each funding cycle has been completed. More frequent evaluations may be conducted as needed; however, it is recognized that incomplete data collection prior to the completion of projects may skew early results. Currently the Program Office houses, manages, and disseminates all data generated from IRWM implementation and planning projects. More details about data management are available in Chapter 4.

Lessons Learned for Future Project Planning

The Inyo-Mono RWMG firmly believes in an active adaptive management approach to developing and implementing future IRWM Plan(s). As such, it is the intent of the RWMG to utilize the information derived from monitoring and evaluation of the Phase II Inyo-Mono IRWM

Plan and projects to modify monitoring systems to help ensure projects achieve their intended objectives. Furthermore, the intention is to use the lessons learned from the first set of Implementation and Planning projects to develop a region-specific project development tool that other project proponents can use. Included in the tool would be various kinds of information related to project development, such as the cost for writing a grant application, review of engineering and consulting firms, recommended sources for certain materials, etc. This information will also be housed on a project resources page on the Inyo-Mono website (<http://inyo-monowater.org/implementation-round-1/project-reporting-monitoring/>) and in the database discussed in the previous section. The first version of this resources page includes quarterly invoice reports and feasibility studies from projects and will be further developed to include vendor information, costs, labor compliance, and CEQA information along with any other requested relevant and helpful information for future project proponents.

In addition to monitoring and evaluation of specific projects, the Program Office will coordinate with the RWMG on an annual basis to assess progress relative to the Plan's implementation, including progress made towards revisions to the Inyo-Mono Phase II IRWM Plan. Doing so on an iterative basis and at regular intervals will provide the Program Office an opportunity to modify strategies and approaches as needed.

Next Steps in Plan Implementation

The Inyo-Mono RWMG intends that the updated Plan will serve as the basis for the next 3-5 years of water-resources planning and management for the Inyo-Mono IRWM Region. Furthermore, we expect that, through regular updates that reflect new information and changing conditions, the Inyo-Mono IRWM Plan will continue to be useful in the long term.

The Inyo-Mono RWMG will continue to pursue implementation funding through Proposition 84. However, given that Prop. 84 is coming to a close in the near future, the Group recognizes that alternative funding sources need to be sought out and pursued. To this end, the RWMG is developing a sustainable finance strategy through the Round 2 Planning Grant. It is expected that the RWMG will utilize this strategy to help ensure the continued viability of the IRWM Program, particularly in the absence of a current water bond.